Assignment 2
ENSF 608 Winter 2023
Department of Electrical and Software Engineering
Schulich School of Engineering

Due : February 19, 2023 (11:59 PM)

The objective of this assignment is to apply your understanding of the relational data model and the steps for mapping from conceptual ER/EER diagrams to a logical design.

Submission: This is an individual assignment. Your submission must be your own original work. Please upload your solution as a single PDF file to the 'Assignment#2' D2L dropbox folder. The dropbox folder only accepts one pdf file and will always keep the latest uploaded file and discard the previous versions.
Your solution may be handwritten or typed, and you may draw your diagram by hand or by using software tools. Handwritten work may be scanned or photographed but must be legible to be graded.

Weighting: This assignment is out of 25 marks and is worth 12.5% of your overall grade.

Grading:
- All relational data models and ER/EER models should follow the formatting conventions outlined in the lecture notes.
- All relations should have a name, primary key, attribute(s) as necessary, and foreign key(s) as necessary.
- Each relational data model must contain relations and should use arrows to represent foreign keys (referential integrity).
- The ER/EER diagram should include correct notation for entity types, relationship types, attributes, key attributes, and relationship attributes.
- Cardinality constraints are not needed. Marks will be deducted for incorrect or missing information. Solutions must be neat and organized.

Question#1 (15 marks) :

Figure 1 shows an example of an EER diagram for a university database. This database keeps track of students and their majors, transcripts, and registration as well as of the university's course offerings. The database also keeps track of the sponsored research projects of faculty and graduate students.
Map this schema into a relational data model, including all primary keys and referential integrity constraints (foreign keys).
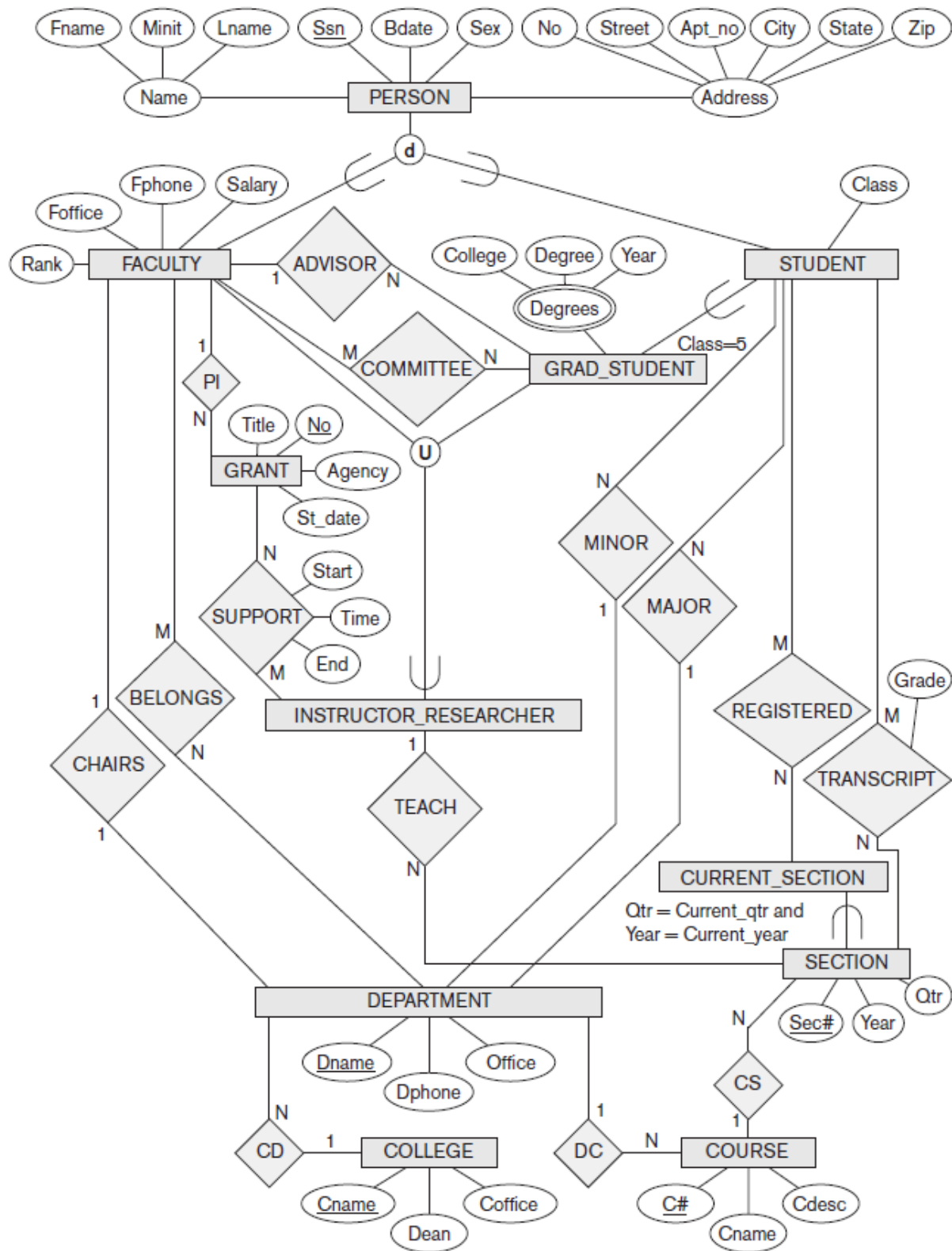
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Figure 1

Question#2 (10 marks) :

The following Figure 2 shows a relational schema for a library database.
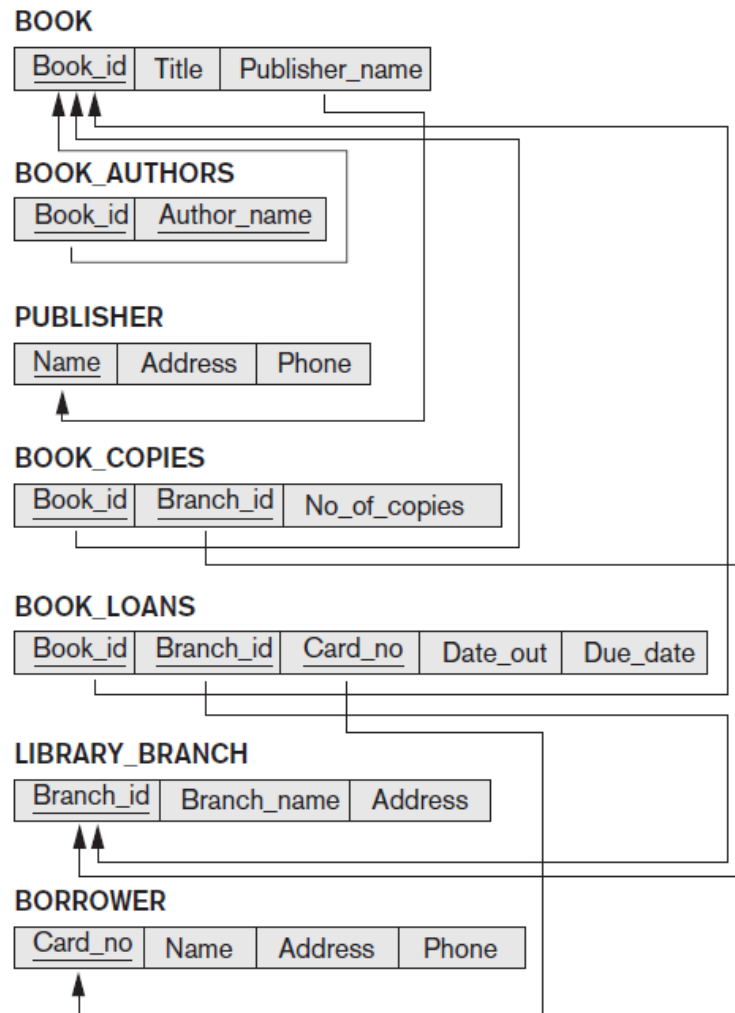Reverse engineer the schema to create a conceptual ER model. State any assumptions that you make.

Figure 2